

Application No. 10/678,527
Amendment dated April 3, 2006
Reply to Office Action dated January 4, 2006

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (currently amended) A sensor comprising:
a substrate;
a pixel situated on a single level on the substrate; and
an electronics circuit situated on the single level, wherein the pixel has a fill factor greater than 69 percent.
2. (canceled)
3. (currently amended) The sensor of claim [[2]] 1, wherein the pixel is an infrared light detector.
4. (original) The sensor of claim 3, wherein the substrate has a pit proximate to the pixel.
5. (original) The sensor of claim 4, wherein the pixel has at least one via in the one level supporting the pixel.
6. (original) The sensor of claim 5, wherein the electronics circuit comprises a FET circuit.
7. (original) The sensor of claim 5, wherein the electronics comprises a bipolar transistor circuit.

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8. (previously presented) The sensor of claim 6, wherein the electronics circuit comprises at least one small area FET, leaving a significant portion of the substrate free of circuits.
9. (original) The sensor of claim 8, wherein the electronics is CMOS circuitry.
10. (original) The sensor of claim 9, wherein the pixel is a microbolometer.
11. (currently amended) A thermal sensor comprising:
 - a substrate; and
 - an array of pixels situated on the substrate; and
 - wherein:
 - each pixel is located on a single level;
 - an electronic circuit is associated with each pixel; [[and]]
 - each electronic circuit is located on the single level with the pixel; and
the pixels have a fill factor greater than 69 percent.
12. (original) The sensor of claim 11, wherein each pixel is an infrared light detector.
13. (original) The sensor of claim 12, wherein each pixel is suspended over a pit in the substrate.
14. (original) The sensor of claim 13, wherein each electronic circuit is CMOS FET circuitry.
15. (original) The sensor of claim 14, wherein each pixel is a microbolometer.
16. (currently amended) A sensing means comprising:

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means for sensing infrared light;
means for electronically processing signals related to infrared light sensed by the
means for sensing infrared light; and
means for supporting on one level the means for sensing infrared light and the
means for electronically processing signals, wherein the means for
electronically processing signals has an area that is a fraction of the area of
the means for sensing infrared light.

17. (original) The means of claim 16, wherein the means for supporting on one level
supports the means for sensing infrared light over a thermal isolating opening.

18. (canceled)

19. (currently amended) The means of claim [[18]] 17, wherein the means for sensing
infrared light is an array of pixels.

20. (previously presented) The means of claim 19, wherein:
each pixel of the array of pixels is a microbolometer pixel comprising VO_x; and
the means for electronically processing signals is small area transistor circuitry
that leaves a significant portion of the means for supporting free of
circuits.

21. (original) The means of claim 20, wherein the small area transistor circuitry is
CMOS FET circuitry.

22. (original) The means of claim 21, wherein:
the means for supporting on one level is a planar level substrate; and

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the thermal isolating opening is a pit in the substrate under each pixel of the array of pixels.

23. (currently amended) A sensor comprising:
 - a substrate;
 - a pixel situated in a first plane relative to a surface of the substrate; and
 - an electronics circuit situated in the first plane; wherein the pixel has a fill factor greater than 69 percent.
24. (currently amended) A thermal sensor comprising:
 - a substrate; and
 - an array of pixels situated on the substrate; and
 - wherein:
 - each pixel is located on a first surface;
 - an electronic circuit is associated with each pixel; [[and]]
 - each electronic circuit is located on the first surface proximate to the pixel; and each pixel has a fill factor greater than 69 percent.
25. (currently amended) A thermal sensor comprising:
 - a substrate; and
 - an array of pixels situated on the substrate; and
 - wherein:
 - an electronic circuit is associated with each pixel; and
 - each electronic circuit is situated horizontally proximate to the pixel; wherein the pixels have a fill factor greater than 69 percent.
26. (currently amended) A thermal sensor comprising:
 - a substrate; and

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an array of pixels situated on the substrate; and
electronics situated on the substrate horizontally proximate to the array of pixels;
wherein each pixel has a fill factor greater than 69 percent.

27. (currently amended) A sensing means comprising:
means for sensing infrared light;
means for electronically processing signals related to infrared light sensed by the
means for sensing infrared light; and
means for supporting on one surface the means for sensing infrared light and the
means for electronically processing signals; wherein the means for
electronically processing signals has an area that is a fraction of the area of
the means for sensing infrared light.

28. (currently amended) A sensing means comprising:
means for sensing infrared light;
means for electronically processing signals related to infrared light sensed by the
means for sensing infrared light; and
means for supporting the means for sensing infrared light and the means for
electronically processing signals horizontally proximate to each other;
wherein the means for electronically processing signals has an area that is
a fraction of the area of the means for sensing infrared light.

29. (currently amended) A sensing means comprising:
means for sensing infrared light;
means for electronically processing signals related to infrared light sensed by the
means for sensing infrared light; and
means for supporting in a plane the means for sensing infrared light and the
means for electronically processing signals; wherein the means for

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electronically processing signals has an area that is a fraction of the area of
the means for sensing infrared light.